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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/705,180	11/11/2003	Daniel P. Vollmer	020569-03900 (P202-1284-U)	4645
71762	7590	08/20/2008	EXAMINER	
JONES & SMITH, LLP 2777 ALLEN PARKWAY SUITE 800 HOUSTON, TX 77019			FIGUEROA, JOHN J	
			ART UNIT	PAPER NUMBER
			1796	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/705,180	Applicant(s) VOLLMER, DANIEL P.	
	Examiner JOHN J. FIGUEROA	Art Unit 1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-36,39,57,60,61 and 64-90 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 30-36,39,57,60,61 and 64-90 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/05/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. Receipt is acknowledged of a request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e) and a submission (amendment), filed on June 13, 2008. The request has been deemed proper and this application has been hereby examined in view of said amendment.

Response to Amendment

2. The nonstatutory obviousness-type double patenting rejection over copending application 10/911,038 is maintained for reasons previously made of record in item 1 on page 2 of the Final Office Action dated December 14, 2007 (hereinafter 'FOA').

3. The 35 U.S.C. 103(a) rejection of claims 30-36, 39, 57, 60 and 61 over USPN 6,479,573 to Burdick et al. (hereinafter 'Burdick') in view of USPN 6,315,061 B1 to Boatman (hereinafter 'Boatman') has been maintained for reasons previously made of record in item 6 on page 3 of FOA. This rejection has been extended to claims 64-69 and 77-83 as discussed below in the instant action.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. New claims 70-76 and 84-90 are rejected under 35 U.S.C.112, first paragraph, because the specification, while being enabling for the salt solution of the suspension to be an alkali formate brine, it does not reasonably provide enablement for every aqueous salt solution as recited in independent claims 70 and 84. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

These two new independent claims do not limit the salt component of the aqueous salt solution. Although the specification provides written description support for the aqueous salt solution to be a formate brine, it does not provide sufficient guidance for the salt component of the cellulosic suspension to be any salt known to man. The present specification clearly states that the instant invention is drawn to a cellulosic polymer suspension in an alkali formate solution. (Title; Abstract; page 1, [0009]; page 2, [0016] and [0017])

Accordingly, a person of ordinary skill in the art, to practice the invention, would have to undergo undue experimentation to determine which salt solution, from all known salt fluids/brines, would be suitable to suspend a cellulosic polymer to thicken a drilling/treatment fluid during an oil recovery process.

Claim Rejections - 35 USC § 102

6. **The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.**

7. Claims 70-76 and 84-90 are rejected under 35 U.S.C. 102(b) as being anticipated by Burdick or by USPN 5,785,747 to Vollmer et al. (hereinafter 'Vollmer').

Burdick was discussed previously in prior Office Actions and the grounds of rejection therein are repeated herein for Applicant's convenience.

Burdick discloses an aqueous suspension, that can be used as a thickening an aqueous system such as an oil well drilling mud, said aqueous suspension comprising water, a salt(s) including a carbon-containing salt, xanthan gum as a stabilizer, a water-soluble polymer and/or a co-suspended thickening polymer, such as hydroxyethylcellulose (nonionic), hydrophobically-modified hydroxyethylcellulose and carboxymethylcellulose; wherein the most preferred carbon-containing salts are sodium formate and potassium formate. (Col. 3, lines 33-40; col. 4, lines 35-37 and 63-67; col. 5, lines 15-25 and 44-59; col. 14, lines 1-50; See e.g., Examples 2-3 disclosing a suspension containing hydroxyethylcellulose and xanthan gum in a sodium formate aqueous solution; Example 4 disclosing using the suspension of Example 3 as a thickening agent) The suspension can contain one carbon-containing salt or a mixture of salts that can include inorganic salts. (Col. 4, lines 19-48)

Regarding new claims 75 and 82, the formate salt can be also be used in conjunction with other salts, such as a non-carbon containing electrolyte such as a bromide or chloride. (Col. 4, lines 38-47)

Burdick further discloses that the carbon-containing salt can be present in up to about 45% by weight of the *suspension*, the polymer(s) about 5 to 30% and water about

40 to 85%. Thus, the concentration of the salt(s) in *solution* can be as high as 55%.
(Col. 4, lines 48-63; col. 13, lines 54-58)

Vollmer discloses viscosifier compositions and methods for viscosifying aqueous solutions/brines in oil drilling operations; wherein the composition comprises high-density brine, an alcohol and a water-soluble or water-dispersible polymer; wherein the polymer can be, e.g., anionic cellulose or carboxymethyl hydroxyethyl cellulose, and wherein the salt solution can be a formate brine. (Abstract; col. 2, lines 1-31; col. 4, lines 15-67; col. 7, lines 1-6 and 33-64; Example 1) Crosslinking agents and other additives can be added to viscosify a high density brine while used in subterranean drilling applications. (Col. 8, lines 50-61; Example 3 on col. 9-10)

Vollmer further discloses density ranges for bromide and chloride salts, such as 11.6 to 15.1 pounds/gallon for calcium chloride/bromide brines, that are within the range recited in Applicant's claims. (Table I) The polymer component can range from 1-65% by suspension weight, whereas the salt is 0.1 to about 50% by weight. (Col. 7, lines 53-64)

Although Burdick and Vollmer do not specifically disclose the "true crystallization temperature (TCT), API 13 J" property for the aqueous suspension, because the aqueous suspensions disclosed by Burdick and encompassed by the instant claims are the same, then Burdick's aqueous suspension and that recited in the instant claims must inherently possess the same physical properties, such as TCT.

Thus, the instant claims are anticipated by both Burdick and Vollmer.

Claim Rejections - 35 USC § 103

8. New claims 64-69 and 77-83 are rejected under 35 U.S.C. 103(a) as unpatentable over Burdick in view of Boatman”.

Burdick was discussed above. Boatman was discussed previously in prior Office Actions and grounds of rejection therein are repeated herein for Applicant's convenience.

Burdick does not expressly disclose the viscosifying suspension to include a *mixture* of sodium formate with either potassium formate or cesium formate.

On the other hand, Boatman teaches a brine-based drilling fluid for oil and gas recovery operations stored in a ballast compartment of a work boat, wherein said drilling fluid does not contains undissolved solids and is designed to provide a biostatic environment and a density appropriate for the environment. (Abstract; col. 1, line 54 to col. 2, line 18)

Boatman further teaches that the density of a drilling fluid is designed to maintain the hydrostatic pressure within the well bore to prevent shallow water flows and that the fluid density is dependent on the amount of dissolved solids present in the fluid, such as the amount of formate salts of sodium, potassium and cesium that is present in the fluid. (Col. 3, lines 46-54; col. 9, lines 40-50; col. 10, lines 39-42)

Furthermore, Boatman teaches that the density of the drilling fluid is adjusted by selecting an appropriate salt combination based on several factors, such as environmental considerations, the requisite minimum/maximum density, cost

considerations and/or desired freezing point of the solution (particularly for off-shore drilling applications in colder waters). (Col. 3, lines 54-59)

In Examples 3-6, Boatman teaches viscosified drilling fluid brines of varying densities containing liquid hydroxyethylcellulose and xanthan gum as a stabilizer, in calcium chloride, calcium bromide, sodium formate and potassium formate brines respectively.

Accordingly, it would have been obvious to a person of ordinary skill in the art at the time that the invention was made to manipulate the alkali formate salt content (and, thus, the density) of the viscosifying suspension composition disclosed in Burdick and add it to an aqueous drilling fluid to thicken said drilling fluid. One of ordinary skill in the art would have been motivated to do so to attain an optimized density for the resultant brine-based drilling fluid that would be appropriate for a particular drilling operation condition, including operations under hazardous and extreme temperature/pressure conditions that is, furthermore, environmentally friendly, as taught by Boatman.

Thus, the claims are unpatentable over Burdick and Boatman.

Response to Arguments

The Double Patenting Rejection (item 1 of FOA)

9. Applicant did not provide any substantive arguments in response to the double patenting rejection and it is thus maintained and further extended to additional claims as indicated above in paragraph #1 of the instant action.

The 103 Rejection over Burdick and Boatman (item 6 of FOA)

10. Applicant's arguments in the amendment/response to FOA filed June 13, 2008 (hereinafter "Response") and in the 1.132 declaration traversing the instant 35 U.S.C. 103 rejection as unpatentable over Burdick in view of Boatman have been fully considered but deemed unpersuasive.

Applicant's arguments in Response and in the 1.132 declaration traversing the instant 103 rejection regarding Burdick (primary reference) not disclosing the composition "alleviating loss of brine" and regarding Boatman (secondary reference) not directed to *thickening* a brine, are not persuasive. As stated in item 10 of FOA, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Burdick discloses thickening an aqueous fluid in an oil drilling operation by adding a thickening composition of a formate brine and cellulosic derivative (suspension). Boatman provides a discussion of drilling fluids in general on column 3, line 46 to column 4, line 14 and teaches to manipulate the density of fluids used in drilling operations by varying the composition percentages of sodium, potassium and cesium formate salts to accommodate well site physical and environmental considerations. It would have been obvious to one in the art to in view of the teachings in Boatman to manipulate the density of the viscosifying fluid in Burdick by varying the the formate salt content/mixture of the viscosifying brine to thereby attain a resultant

site/environmental appropriately thickened aqueous drilling fluid having a preferred density upon the addition of Burdick's enhanced viscosifying fluid to an aqueous drilling fluid during a subterranean operation.

Moreover, as discussed in FOA, because the process suggested by Burdick and Boatman is encompassed by the method recited in the instant claims, then the process suggested by the prior art should be considered as "thickening a brine ... to alleviate loss of brine" because the resultant method and brine in both the instantly claimed and prior art processes provide a resultant drilling fluid that is thickened with a brine that is having higher density due to manipulation of the formate salt content density. It is unclear as to why the process of Burdick and Boatman would not "alleviate loss of brine" if it involves adding a viscosifying cellulosic suspension to a drilling fluid containing the same components as recited in the present claims.

Applicant arguments in the 1.132 declaration concerning the "fluid loss pill" aspects of the present invention and regarding the amount of polymer/HEC in the viscosifying composition, albeit interesting, are not relevant because the present claims are not drawn to a fluid loss pill but instead to a method of thickening. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Therefore, the claims are unpatentable over Burdick in view of Boatman.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOHN J. FIGUEROA whose telephone number is (571)272-8916. The examiner can normally be reached on Monday-Thursday 8:00-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JJF/RAG

/John J. Figueroa/
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